

What is claimed is:

1. A flexible electrical connector adapted to connect to a
5 complimentary electrical connector receiver, said flexible electrical
connector comprising first and second pluralities of spaced apart, elongate,
signal carriers; an elongate current return conductor; and an insulator; said
first plurality of signal carriers being spaced apart from said current return
10 conductor by said insulator and extending substantially parallel to said
current return conductor, and said second plurality of signal carriers being
spaced from an opposite side of said current return conductor to said first
plurality of signal carriers by a further insulator, respective exposed end
regions of said first and second pluralities of signal carriers and said
15 current return conductor comprising respective, integrally formed contact
regions thereof, said contact regions being adapted to couple said first and
second pluralities of signal carriers and said current return conductor
electrically to corresponding contacts of said complimentary electrical
connector receiver.
- 20 2. A connector according to claim 1 wherein said first and second
pluralities of signal carriers are thin film tracks deposited upon said
insulators.
3. A connector according to claim 1 wherein one of (i) said plurality of
25 signal carriers and (ii) said current return conductor, extends longitudinally
of the other of (i) and (ii) beyond a terminal end of said other of (i) and (ii)
so that end portions of (i) and (ii) are staggered in position longitudinally
along said connector.
- 30 4. A connector according to claim 1 wherein said second plurality of
signal carriers extend longitudinally of said connector beyond a terminal
end of said first plurality of signal carriers.

5. A connector according to claim 1 wherein said second plurality of signal carriers extend longitudinally of said connector beyond a terminal and of said current return conductor.

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6. A connector according to claim 4 wherein said second plurality of signal carriers extend longitudinally of said connector beyond a terminal end of said current return conductor.

10 7. A connector according to claim 1 wherein said current return conductor is at least as wide as a total width spanned by a wider one of the following: said first plurality of signal carriers, said second plurality of signal carriers.

15 8. A connector according to claim 1 wherein a terminal end of said second plurality of signal carriers is located at substantially the same longitudinal location as a terminal end of one of the following: said first plurality of signal carriers, said current return conductor.

20 9. A connector according to claim 1 wherein said connector has a positive location formation disposed at one of the following: an edge of the connector, a side portion of the connector.

10. A connector according to claim 1 wherein the current return
25 conductor is one of the following: a sheet of conducting material, a mesh of a conducting material.

11. A connection arrangement comprising a flexible connector comprising a flexible electrical connector adapted to connect to a complimentary electrical connector receiver, said flexible electrical connector comprising first and second pluralities of spaced apart, elongate, signal carriers; an elongate current return conductor; and an insulator; said first plurality of signal carriers being spaced apart from said current return conductor by said insulator and extending substantially parallel to said current return conductor, and said second plurality of signal carriers being spaced from an opposite side of said current return conductor to said first plurality of signal carriers by a further insulator, respective exposed end regions of said first and second pluralities of signal carriers and said current return conductor comprising respective, integrally formed contact regions thereof, said contact regions being adapted to couple said signal carriers and said current return conductor electrically to corresponding contacts of said complimentary electrical connector receiver and a complimentary electrical connector receiver comprising a housing, first and second pluralities of signal contacts, and a current return conductor contact: each of said first and second pluralities of signal contacts being arranged to engage said respective contact regions of said first and second pluralities of signal carriers, each of said first plurality of signal contacts being configured so as to allow said connector to pass thereover so as to enable said current return conductor to contact said current return conductor contact.
12. An arrangement according to claim 11 wherein said current return conductor contact is arranged to contact said current return conductor contact region over a substantial fraction of said current return conductor's width, in use, when said first plurality of signal carrier contact regions are in contact with said plurality of signal contacts.
13. An arrangement according to claim 11 wherein there is a single elongate contact for contacting said current return conductor to ground.

14. An arrangement according to claim 11 wherein said first plurality of signal contacts and said current return conductor contact are arranged to be biased against a surface of said connector, in use.

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15. An arrangement according to claim 11 wherein said first plurality of signal contacts are arranged to be biased against said connector at a first surface thereof and said second plurality of signal contacts are arranged to be biased against said connector at a second surface thereof so as to retain
10 positively, in use, said connector.

16. An arrangement according to claim 11 wherein said housing comprises a fixing arranged to co-operate with a positive location formation upon said connector, in use.

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17. An arrangement according to claim 11 wherein said current return conductor contact is roughened, rippled, bent or dimpled, or has projections thereupon.

20 18. A connector receiver for receiving a flexible connector, comprising a housing, a current return conductor contact, and first and second signal contacts, said current return conductor contact being arranged to contact a current return conductor of said flexible connector over a substantial fraction of said current return conductor's width, and said first signal
25 contact being arranged to contact a signal carrier of said flexible connector, and said second signal contact being arranged to contact at least one further signal carrier, said further signal carrier being disposed upon an opposite face of said flexible connector from said signal carrier.

30 19. A receiver according to claim 18 wherein said current return conductor contact and said signal contact are spaced apart longitudinally

with respect to the direction of insertion of the flexible connector into said receiver.

20. A receiver according to claim 18 wherein said current return
5 conductor contact is one of the following: roughened, rippled, bent, dimpled, has projections thereupon.

21. A flexible electrical connector adapted to connect to a
complimentary electrical connector receiver, said flexible electrical
10 connector comprising first and second pluralities of spaced apart, elongate, thin film metal tracks, each of which is arranged to carry a signal; an elongate metal ground plane; and an insulating layer; said first plurality of metal tracks being spaced apart from said ground plane by said insulating layer and extending substantially parallel to said ground plane, and said
15 second plurality of metal tracks being spaced from an opposite side of said ground plane to said first plurality of metal tracks by an, or the, insulating layer, respective exposed end regions of said first and second pluralities of metal tracks and said ground plane comprising respective, integrally formed contact regions thereof, said contact regions being adapted to
20 couple said first and second pluralities of metal tracks and said ground plane electrically to corresponding contacts of said complimentary electrical connector receiver.

22. A connection arrangement comprising a flexible connector
25 comprising a flexible electrical connector adapted to connect to a complimentary electrical connector receiver, said flexible electrical connector comprising first and second pluralities of spaced apart, elongate, thin film metal tracks, each of which is arranged to carry a signal; an elongate metal ground plane; and an insulating layer; said first plurality of
30 metal tracks being spaced apart from said ground plane by said insulating layer and extending substantially parallel to said ground plane, and said second plurality of metal tracks being spaced from an opposite side of said

ground plane to said first plurality of metal tracks by an, or the, insulating layer, respective exposed end regions of said first and second pluralities of metal tracks and said ground plane comprising respective, integrally formed contact regions thereof, said contact regions being adapted to couple said first and second pluralities of metal tracks and said ground plane electrically to corresponding contacts of said complimentary electrical connector receiver and a complimentary electrical connector receiver comprising a housing, first and second pluralities of signal contacts, and a ground plane contact: each of said first and second pluralities of signal contacts being arranged to engage said respective contact regions of said first and second pluralities metal tracks, each of said first plurality of signal contacts being configured so as to allow said connector to pass thereover so as to enable said ground plane to contact said ground plane contact.

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23. A connector receiver for receiving a flexible connector, comprising a housing, a ground plane contact, and first and second signal contacts, said ground plane contact being arranged to contact a metal ground plane of said flexible connector over a substantial fraction of said ground plane's width, and said first signal contact being arranged to contact a first metal track, arranged to carry a signal, of said flexible connector, and said second signal contact being arranged to contact a second metal track, arranged to carry a signal, of said flexible connector, said second metal track being disposed upon an opposite face of said flexible connector from said signal carrier.

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